Emergency fuel valve

The emergency fuel valve has a model A Torq handle installed on it.
The valve is a 5150-31-3600TT Stainless Steel cress 316
The torq handle is a model A cost is 91.80

RKN42TT - service kit for	17.95 includes the seats, body seals, stem seals
052 0582 36- body insert for	48.95
001 0807 36- ball for	25.50
003 1327 36- stem for	13.15

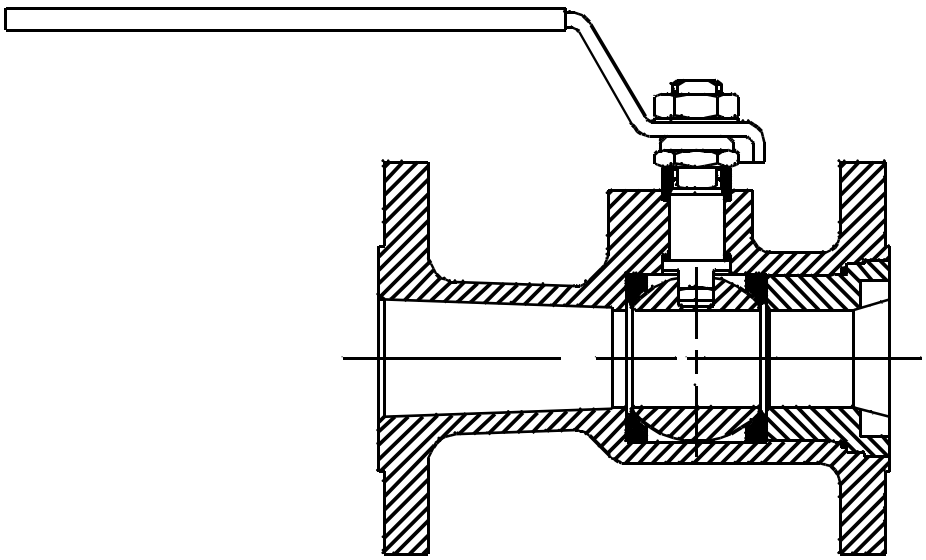
The company to get these repair parts from is
Sea-Port Controls, Inc
12119 N.E. 99th street suite 2000
Vancouver, Wa 98682
Point of contact is Dave Fahlgren
Ph 360 253 6333
Fax 360 253 9120
www.seaportcontrols.com
AMI-8 Torq handle mounting instructions
B160-1 Torq Handle specifications
IMO-050 Is the valve installation, maintenance and operation instructions
IMO-071 Torq handle maintenance and operating instructions
Please note on page 2 of IMO-071 the torq handle is not field repairable.

JAMESBURY
NELES CONTROLS GROUP

IMO- 50
ISSUE 6/97

1/2" - 2" SERIES 5000
3/4" - 1 1/2" SERIES 6000
MODELS B AND C
FLANGED BALL VALVES

INSTALLATION, MAINTENANCE AND OPERATING INSTRUCTIONS



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READ THESE INSTRUCTIONS FIRST!

These instructions provide information about safe handling and operation of the valve.

If you require additional assistance, please contact your authorized Neles-Jamesbury distributor or representative.

For address and phone number, call Neles-Jamesbury at (508) 852-0200.

SAVE THESE INSTRUCTIONS!

1 GENERAL

1.1 WARNING

FOR YOUR SAFETY AND PROTECTION, IT IS IMPORTANT THAT THE FOLLOWING PRECAUTIONS BE TAKEN PRIOR TO REMOVING THE VALVE FROM SERVICE OR BEFORE ANY DISASSEMBLY OF THE VALVE:

1. AT ALL TIMES DURING THIS ENTIRE PROCEDURE, KEEP HANDS OUT OF THE VALVE. A REMOTELY ACTUATED VALVE COULD CLOSE AT ANY TIME AND RESULT IN SERIOUS INJURY.

2. KNOW WHAT MEDIA IS IN THE LINE. IF THERE IS ANY DOUBT, CHECK WITH THE PROPER AUTHORITY.

3. WEAR ANY PROTECTIVE CLOTHING OR EQUIPMENT NORMALLY REQUIRED WHEN WORKING WITH THE MEDIA INVOLVED.

4. DEPRESSURIZE THE LINE AND VALVE AS FOLLOWS:

A.) OPEN THE VALVE AND DRAIN THE LINE.

B.) CLOSE AND OPEN THE VALVE TO RELIEVE ANY RESIDUAL PRESSURE THAT MAY BE IN THE VALVE PRIOR TO REMOVING THE VALVE FROM SERVICE. LEAVE THE VALVE IN THE OPEN POSITION.

C.) AFTER REMOVAL AND PRIOR TO ANY DISASSEMBLY, DRAIN ANY REMAINING MEDIA BY PLACING THE VALVE IN THE VERTICAL POSITION AND CAREFULLY OPEN AND CLOSE THE VALVE SEVERAL TIMES.

5. SEAT AND BODY RATINGS - THE PRACTICAL AND SAFE USE OF THIS PRODUCT IS DETERMINED BY BOTH THE SEAT AND BODY RATINGS. READ THE NAME TAG AND CHECK BOTH RATINGS. THIS PRODUCT IS AVAILABLE WITH A VARIETY OF SEAT MATERIALS. SOME OF THE SEAT MATERIALS HAVE PRESSURE RATINGS THAT ARE LESS THAN THE BODY RATINGS. ALL OF THE BODY AND SEAT RATINGS ARE DEPENDENT ON VALVE TYPE AND SIZE, SEAT MATERIAL, BOLTING MATERIAL, AND TEMPERATURE. DO NOT EXCEED THESE RATINGS.

2 INSTALLATION

1. Place the valve in the open position.

2. Flow through these Neles-Jamesbury valves can be in either direction, however, it is recommended that the valve be installed with the insert facing upstream.

3. Use the proper size flange bolts and follow the recommended practices of the gasket manufacturer when tightening the flange bolts.

4. After valve is in line, or before testing, tighten stem nuts (15 and 16) 1/4 turn.

3 MAINTENANCE

3.1 General

1. General Maintenance requires periodic observation to ensure that the valve is functioning well. Routine maintenance consists of tightening the stem nut (15) periodically to compensate for stem seal wear. This may be done as follows:

a.) Manual Valves - Loosen the handle nut (16) and tighten the stem nut (15) until snug, then tighten an additional 1/4 turn. Retighten the handle nut.

b.) Actuated Valves - When the valve is connected to the actuator by a no-play (clamped) type coupling, loosen the coupling before tightening the stem nut (15). Tighten the stem nut until snug, then tighten an additional 1/4 turn.

2. Overhaul Maintenance consists of replacing seats and seals. A standard service kit consisting of these parts may be obtained through your Neles-Jamesbury distributor. Refer to the Diasassembly and Assembly sections below for details on installing the service kits.

Series 5000 Valve Service Kits

Valve Size	1/2"	3/4"	1"	1 1/2"	2"
TFE Seats	RKN41TT	RKN42TT	RKN43TT	RKN45TT	RKN46TT
Filled TFE Seats	RKN41MT	RKN42MT	RKN43MT	RKN45MT	RKN46MT
PFA Seats	RKN41BT	RKN42BT	RKN43BT	RKN45BT	RKN46BT
PEEK Seats*	RKN41LG	RKN42LG	RKN43LG	RKN45LG	RKN46LG

Series 6000 Valve Service Kits

Valve Size	3/4"	1"	1 1/2"
TFE Seats	RKN43TT	RKN44TT	RKN46TT
Filled TFE Seats	RKN43MT	RKN44MT	RKN46MT
PFA Seats	RKN43BT	RKN44BT	RKN46BT
PEEK Seats*	RKN43LG	RKN44LG	RKN46LG

NOTE: Service kits contain the stem seals for both the fire-tested and non-fire-tested valve, two white stem seals (8), one secondary stem seal (7), and one red tinted lower stem seal (24), Refer to the Assembly section for details on the correct installation of the seals.

***PEEK** seated valves contain two identical graphite stem seals, one for the upper seal and one for the lower seal.

3.2 Disassembly

Tools needed to disassemble Neles-Jamesbury valves may be ordered as service parts from your local Neles-Jamesbury distributor or the home office.

NOTE: Replacement of all seats and seals is recommended if any disassembly becomes necessary.

1. Follow the steps in the WARNING section before performing any work on the valve.

2. Open and close the valve and leave in the closed position.

3. Remove the handle nut (16), the spring tab washer (19) (Model C) or lockwasher (Model B), compression ring (21), upper stem seal (8), and associated hardware from the top of the stem (4). See Figure 6 or 7 as appropriate for Model B versus Model C valve configurations.

4. Unscrew and remove the insert (2).

5. Remove and discard the body seal (6).

6. Slowly place the valve in a vertical position (with the insert end down) on a clean soft surface such as a folded rag or piece of cardboard. The ball (3) and one seat (5) may fall out. If not, use a piece of wood or some other soft material to gently tap the ball from the non-insert end of the valve.

7. Press the stem (4) into the valve body cavity. It may be necessary to tap it with a piece of wood or some other soft material.

8. Remove the stem. Pry out and discard all upper and lower stem seals (7, 8, & 24), BEING CAREFUL NOT TO SCRATCH ANY SEALING SURFACES IN THE BODY.

NOTE: On 1/2" valves, the stem cannot be removed with the seals in place. Push the stem and lower stem seal into the body cavity and remove the upper stem seal. Then remove the stem and lower stem seal together from the valve body. Be careful not to scratch any sealing surfaces in the valve body.

9. Carefully pry the bottom seat (5) out of the body. Do not scratch sealing surfaces in the valve body.

3.3 Assembly

NOTE: A lubricant compatible with the media should be applied lightly to seats, seals, ball and stem to facilitate assembly and ease of initial operation of the valve. Replace all seats and seals with the proper service kit from the chart shown on page 3.

1. Slide one valve seat (5) sideways into the body (1) cavity to just below the stem hole and tilt it into place so that the proper face will come in contact with the body sealing face as illustrated in Figure 6 or 7. Do not cut or scratch the seat faces.

2. The following instructions are for inserting the stem and stem seals into place. Refer to the proper section.

1/2" Series 5000 Valves

a.) Slide the red tinted lower stem seal (24) and the secondary stem seal (7) (for fire-tested valves), or lower stem seal (8) (for non-fire-tested valves), over the threaded portion of the stem (4). The stem and seal subassembly must look like Figure 1.

b.) Place the body (1) on a flat surface, resting it on both flanges with the bonnet facing down.

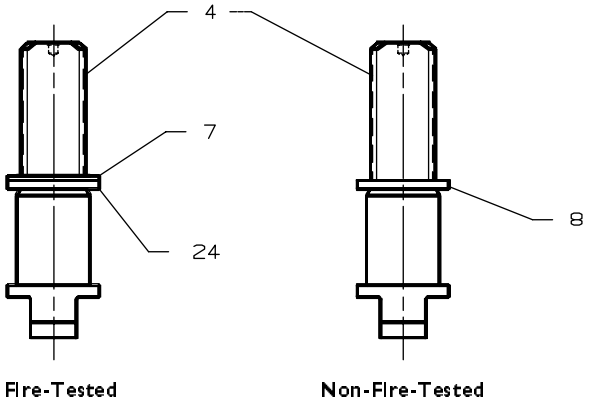
c.) Slide the stem and seal subassembly threaded end first, along the inside body bore toward the stem hole. The blade at the ball end of the stem must be vertical as seen from the insert end of the valve (See Figure 2). When the threaded end of the stem reaches the stem bore, guide it down into the bore and swing the entire stem subassembly up into a vertical position, allowing it to fall into place.

d.) Roll the entire valve on its flanges until the bonnet faces up. Then rotate the stem a 1/4 turn. The stem subassembly should now look like Figure 3 (p. 5) as seen from the insert end of the valve.

e.) Press the seals (7) and (24), or (8), up into the lower stem bore.

f.) From the outside, insert the upper stem seal (8).

g.) Press the stem (4) up into the stem bore until resistance is felt from the lower stem seal. Go on to Step 3.



Stem and Seal Sub-assembly

Figure 1

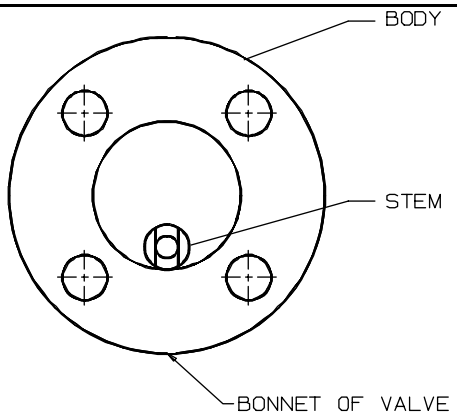


Figure 2

3/4" - 2" Series 5000 or 6000 Valves

a.) From inside the body cavity, first insert the secondary stem seal (7) and then the red tinted lower stem seal (24) (for fire-tested valves), or insert only the lower stem seal (8) (for non-fire tested valves), up into the lower stem bore.

b.) From the outside insert the upper stem seal (8) into the upper stem bore.

c.) Insert the stem (4) into the body cavity and press it gently up into the stem bore until resistance is felt from the lower stem seal. Be careful not to scratch the seals. Go to step 3.

3. Holding the stem in place from inside the body, drop the compression ring (21) (and stem washer (14) if present), spring tab washer (19) (Model C) into place or lockwasher (Model B), screw on the stem nut.

4. Tighten down the stem nut until the stem comes snugly into place. Rotate the stem gently to assure proper seating. Tighten the stem

nut until the stem seals are fully seated, then tighten the stem nut an additional 1/4 turn.

5. **If you have a torque wrench, skip this step and proceed to step 6.** Screw the insert (2) into the body until it is fully seated. Use a pencil or felt tip marker to mark the position as shown in Figure 4. Counting the number of turns, remove the insert.

6. Insert the ball (3), rotating it onto the stem (4) in the closed position. If necessary, turn the stem blade to align with the ball slot.

7. Insert the second seat (5) so that the sealing surface of the seat is towards the ball (See Figure 6 or 7, p. 6 or 7).

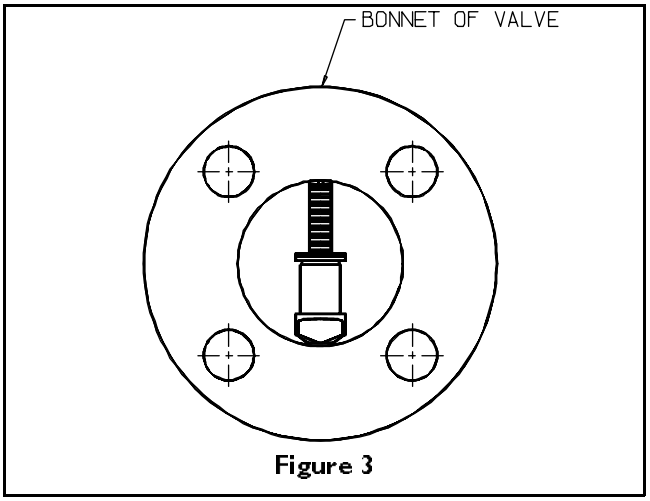


Figure 3

8. Insert the body seal (6) and gently press it into the groove in the body.

9. Using a thread lubricant compatible with the media, screw the insert (2) into the body and tighten with the required torque shown in Table 1. If a torque wrench is not available, tighten the insert the same number of turns as in Step 5 until the marks match the "A" dimension shown in Table I and illustrated in Figure 5.

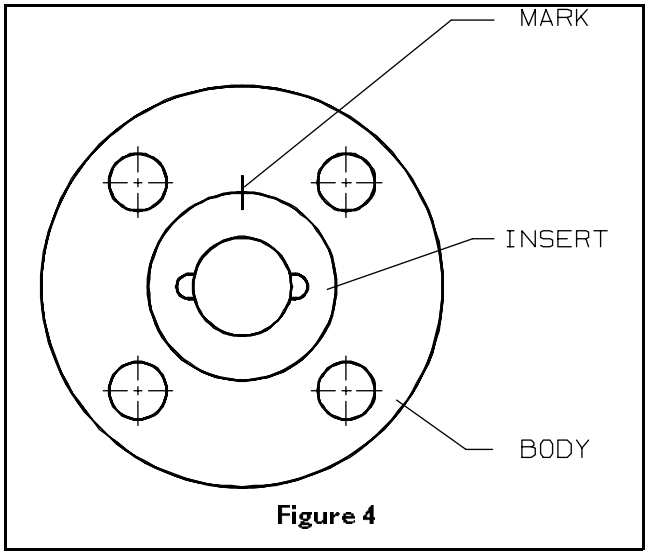


Figure 4

10. Place the handle (17), the spring tab washer (19) (Model C), or lockwasher (Model B), and handle nut (16) on the valve stem and tighten securely. Cycle the valve slowly with a gentle back and forth motion **to build gradually to the full quarter turn.** By cycling the valve **slowly,** the seat lips will seal against the ball. A fast turning motion at this point may cut the seats before they have a chance to form the proper seal.

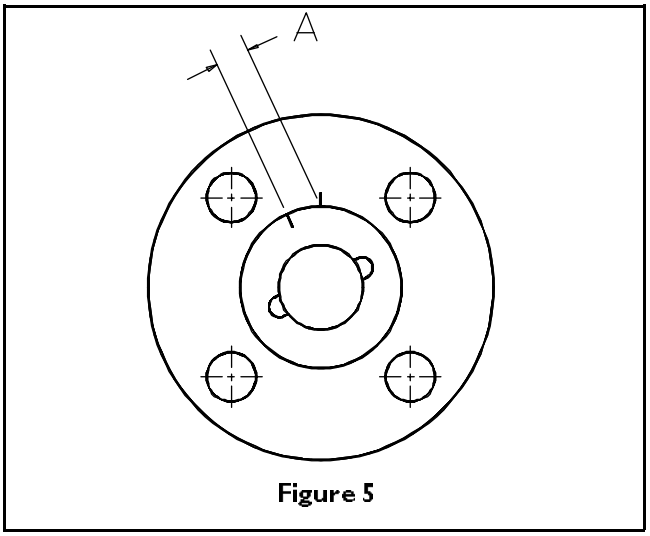


Figure 5

4 ACTUATOR MOUNTING

See AMI-8 for complete instructions.

IMPORTANT: When these valves are equipped with an actuator and the actuator is removed to service the valve, **PROPER ALIGNMENT OF THE ACTUATOR DRIVER AND VALVE STEM IS ESSENTIAL WHEN THE ACTUATOR IS REMOUNTED.** In the case of valves and actuators connected with a split no-play (clamped) coupling, tighten the coupling bolts before final tightening of the valve bracket bolts. In the case of valves and actuators with solid, loose-fit couplings, the actuator should be positioned on the valve without any side loading of the coupling before final tightening of the valve bracket bolts.

AMI-8 is available from your Neles-Jamesbury stocking distributor, or write Neles-Jamesbury, Inc., 640 Lincoln Street, Box 15004, Worcester, MA. 01615-0004.

Table I

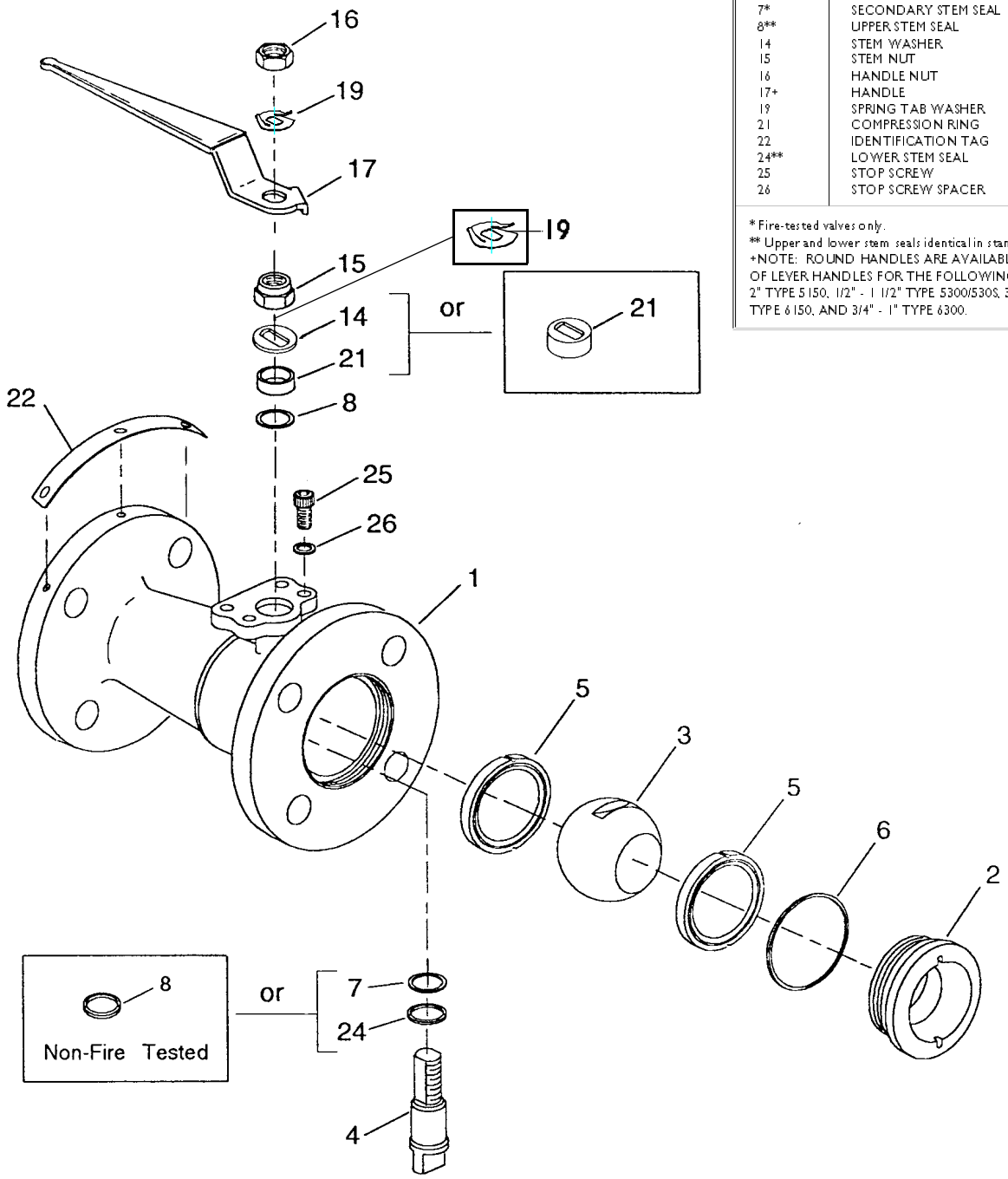
Series 5000 Valves

Valve Size	Torque (LB - FT)		A (inch)
	Alum. & Bronze	Other Material	
1/2	90 - 100	125 - 150	7/32
3/4	90 - 100	125 - 150	1/4
1	90 - 100	125 - 150	5/16
1 1/2	125 - 150	170 - 200	3/8
2	125 - 150	170 - 200	7/16

Series 6000 Valves

Valve Size	Torque (LB - FT)	A (inch)
3/4	125/150	5/16
1	125/150	11/32
1 1/2	170/200	7/16

5 EXPLODED VIEWS AND PARTS LISTS — MODEL C



Parts List - Model "C"

Item No.	Description	Qty.
1	BODY	1
2	INSERT	1
3	BALL	1
4	STEM	1
5	SEAT	2
6	BODY SEAL	1
7*	SECONDARY STEM SEAL	1
8**	UPPER STEM SEAL	1
14	STEM WASHER	1
15	STEM NUT	1
16	HANDLE NUT	1
17+	HANDLE	1
19	SPRING TAB WASHER	2
21	COMPRESSION RING	1
22	IDENTIFICATION TAG	1
24**	LOWER STEM SEAL	1
25	STOP SCREW	2
26	STOP SCREW SPACER	2

* Fire-tested valves only.
** Upper and lower stem seals identical in standard valves.
+NOTE: ROUND HANDLES ARE AVAILABLE IN PLACE OF LEVER HANDLES FOR THE FOLLOWING VALVES: 1/2" - 2" TYPE 5150, 1/2" - 1 1/2" TYPE 5300/5308, 3/4" - 1 1/2" TYPE 6150, AND 3/4" - 1" TYPE 6300.

Figure 6

5 EXPLODED VIEWS AND PARTS LISTS (CONT.) — MODEL B

Parts List - Model "B"

Item No.	Description	Qty.
1	BODY	1
2	INSERT	1
3	BALL	1
4	STEM	1
5	SEAT	2
6	BODY SEAL	1
7*	SECONDARY STEM SEAL	1
8**	UPPER STEM SEAL	1
15++	STEM NUT	1
16++	HANDLE NUT	1
17+	HANDLE	1
19	LOCKWASHER	1
21	COMPRESSION RING	1
22	IDENTIFICATION TAG	1
24**	LOWER STEM SEAL	1
25	STOP SCREW	2

++ Stem nut and handle nut are identical on Model "B" valves.
* Fire-tested valves only.
** Upper and lower stem seals identical in standard valves.
+NOTE: ROUND HANDLES ARE AVAILABLE IN PLACE OF LEVER HANDLES FOR THE FOLLOWING VALVES: 1/2" - 2" TYPE 5150, 1/2" - 1 1/2" TYPE 5300/5305, 3/4" - 1 1/2" TYPE 6150, AND 3/4" - 1" TYPE 6300.

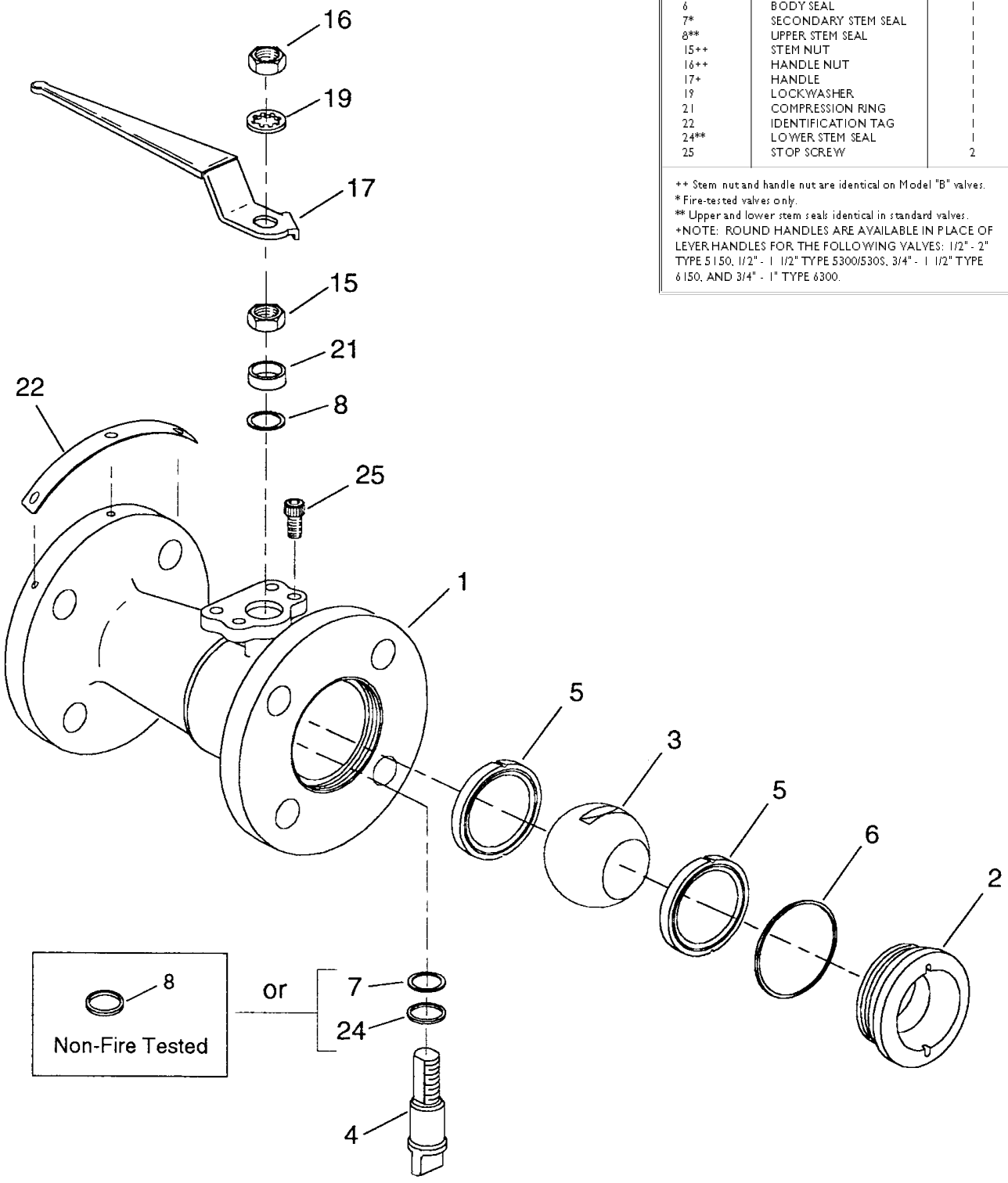


Figure 7

NOTES

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SEA-PORT CONTROLS, INC
12119 N.E. 99th Street Suite 2000 Vancouver, Wa 98682
Tel:360-253-6333 • Fax: 360-253-9120 • Internet: www.seaportconrols.com
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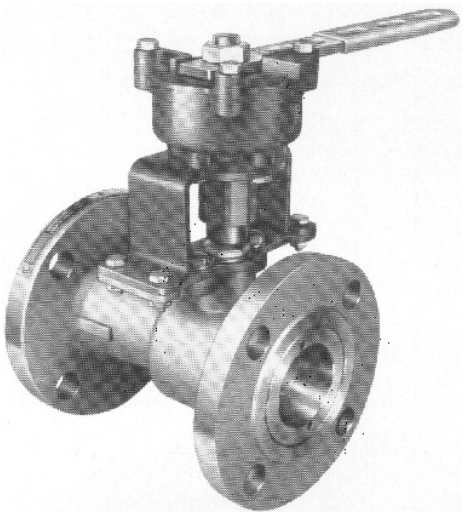
TORQ-HANDLE® SPRING-RETURN HANDLES

JAMESBURY Torq-Handle spring-return handles provide reliable automatic closing (or opening) of manual ball valves immediately upon release of the handle. These handles may be held in the operating position either by hand, by a cable or by a fusible link option designed to release in the event of a fire. A rugged, completely enclosed spring assures quick and automatic cycling of the valve to its designated failure position when the handle is released or the fusible link melts. An electro-thermal link option is also available, to allow the handle to be released from a remote location.

Torq-Handle spring-return handles are available completely assembled and tested on 1/4" through 2" ball valves, or they can be furnished separately, with a hardware kit for field mounting to existing valves. They can be mounted to provide either spring-to-close or spring-to-open operation.



FEATURES

- Valves automatically close (or open) when the handle is released.
- Fusible link options are available to automatically release handle in the event of a fire or when a specific temperature is reached.
- Holes in the handle permit easy attachment of a cable or fusible link.
- Return spring is completely contained in a rugged drawn steel housing for added protection.

SPECIFICATIONS

Temperature range: –40°F to +180°F (–40°C to +82°C).

Materials of construction: steel housing, shaft, handle, and spring; self-lubricating thermoplastic bearings.

Torq-Handle Sizing

There are two sizes of *Torq-Handle* units available, *Torq-Handle* A and *Torq-Handle* B. To select the proper size, determine the actual torque required to operate the valve from the appropriate valve bulletin, then select the *Torq-Handle* that will provide an output torque greater than or equal to that required. Torque outputs for both sizes are shown in the table below. Be sure to make allowances for difficult services such as dry gases, slurries, semi-solids, or corrosive media as described in the torque sections of the valve bulletins.

TORQUE OUTPUT	
TORQ-HANDLE A	75 lb-ft (10 Nm)
TORQ-HANDLE B	15 lb-ft (20 Nm)

OPTIONS AND ACCESSORIES

A variety of optional equipment is available with *Torq-Handle* spring-return handles, including limit switches, locking devices, fusible links, and electro-thermal links. An FM approved Emergency Shutoff and Firesafe Valve assembly can also be provided, as described in Bulletin B132-1.

Limit Switches

JAMESBURY limit switches can be used for remote indication of valve position or for interlocking systems. They are available with single-pole double-throw (SPDT) or double-pole double-throw (DPDT) configurations. Refer to Bulletin B160-4 for specifications on these switches.

Locking Devices

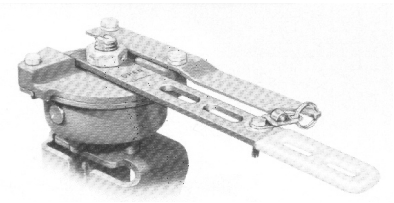
Locking devices can be supplied to padlock the handle in either the open or closed position.

Fusible Links

Self-contained fusible links are available to automatically close or open the valve in the event of a fire or excessive environmental temperature. The link holds the spring-return handle in the cocked position until a specified temperature level is reached. When it melts, the spring-activated handle is released, rotating the valve to its fail-close or fail-open position. Approximate temperature options are shown in the Temperature Tables below.

Type	Temp. Rating	Color Code
FL-0	165°F	None
FL-1	135°F	Black
FL-2	212°F	White
FL-3	286°F	Blue

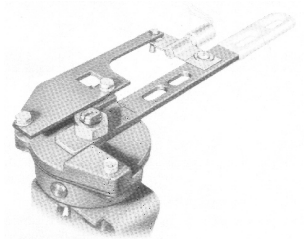
Type	Temp. Rating	Color Code
FL-0	74°C	None
FL-1	57°C	Black
FL-2	100°C	White
FL-3	141°C	Blue



Electro-Thermal Line

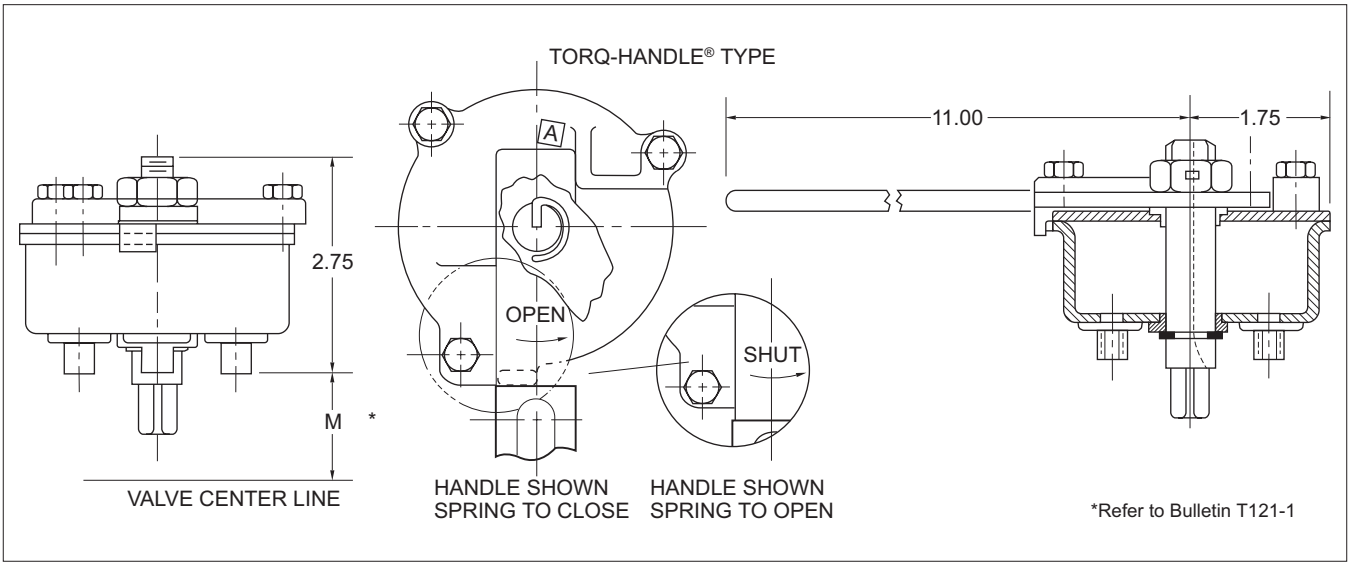
The FE-1 electro-thermal link allows connection to a remote device, such as a smoke or heat detector, to initiate operation of the valve. Specifications are shown in the table below.

Type	Voltage Range	Current	Temp. Rating	
			°F	°C
FE-1	6–30 V DC or AC	0.2 ampere	165	74



HOW TO ORDER

To order *JAMESBURY* ball valves equipped with *Torq-Handle* spring-return handles, specify either *Torq-Handle* A or *Torq-Handle* B (see Torque Output Table) after the valve figure number, for example, 1/2" 5150-31-2236 TT with *Torq-Handle* A.



INTERNATIONAL MANUFACTURING AND SALES LOCATIONS

UNITED STATES: Worcester, Massachusetts ▪ MEXICO: Chihuahua

Our products are available through Neles Controls Sales offices in:

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Denmark, Finland, France, Germany, Indonesia, Italy, Japan, South Korea, Netherlands, Norway, Poland, Portugal, Russia, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, Thailand, United Arab Emirates, United Kingdom, Venezuela, as well as through a world-wide network of representatives.

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NELES CONTROLS GROUP

AMI - 8

Issue Date 10/95

For Mounting These Actuators:
- **Diaphragm - QUADRA-POWR® AND QUADRA-POWR® II Series**
- **Piston - SL/ST/STMS Series**
- **Piston (Rack/Pinion) - SP/SPSR Series**
- **Electric - EL/EJ/EJX/EH/EHX/ERC Series**
- **Vane - V/VSR Series, Manual Gear - MA Series**
- **Other - PMV® and Torq-Handle®**

On These Valves:
- **1/2" thru 2" Series 5000 - Models A, B. C**
- **3/4" thru 1 1/2" Series 6000 - Models A, B. C**
- **1/2" Series 6600 - Models A, B**
- **3/4" thru 1 1/2" Series 6600 - Models A, B, C**
- **2" Series 5600 - Models A, B, C**

ACTUATOR MOUNTING INSTRUCTIONS

WARNING

BEFORE INSTALLING THE VALVE AND ACTUATOR, BE SURE THAT THE INDICATOR POINTER ON THE TOP OF THE ACTUATOR IS CORRECTLY INDICATING THE VALVES POSITION. FAILURE TO ASSEMBLE THESE PRODUCTS TO INDICATE THE CORRECTVALVE POSITION COULD RESULT IN PERSONAL INJURY.

CAUTION WHEN INSTALLING A LINKAGE KIT OR SERVICING A VALVE/ACTUATOR ASSEMBLY, THE BEST PRACTICE IS TO REMOVE THE ENTIRE ASSEMBLY FROM SERVICE.

CAUTION: AN ACTUATOR SHOULD BE REMOUNTED ON THE SAME VALVE FROM WHICH IT WAS REMOVED. THE ACTUATOR MUST BE READJUSTED FOR THE PROPER OPEN AND CLOSE POSITION EACH TIME IT IS REMOVED.

CAUTION: THE LINKAGE HAS BEEN DESIGNED TO SUPPORT THE WEIGHT OF THE NELES-JAMESBURY ACTUATORS AND RECOMMENDED ACCESSORIES. USE OF THIS LINKAGE TO SUPPORT ADDITIONAL EQUIPMENT SUCH AS PEOPLE, LADDERS, ETC., MAY RESULT IN THE FAILURE OF THE LINKAGE, VALVE OR ACTUATOR AND MAY CAUSE PERSONAL INJURY.

DESCRIPTION

These actuator mounting instructions describe the steps required to assemble the actuators to the valves specified above using appropriate linkage kits that are available from Neles-Jamesbury.

Linkage kit designations are listed in Table I for the specific Neles-Jamesbury actuator to the appropriate series and size of Neles-Jamesbury valve. NOTE: This table should not be used for sizing actuators to valves. Refer to the Neles-Jamesbury general catalog for sizing information.

These instructions describe separate procedures in both valve preparation and assembly of linkages for Series 5000, 6000, 5600, 6600, Models A, B or C valves. To determine the series and model of a particular valve refer to the identification tag located on the valve flange.

Table I

Linkage Kit Designation

(Not to be used for sizing actuators to valves.)

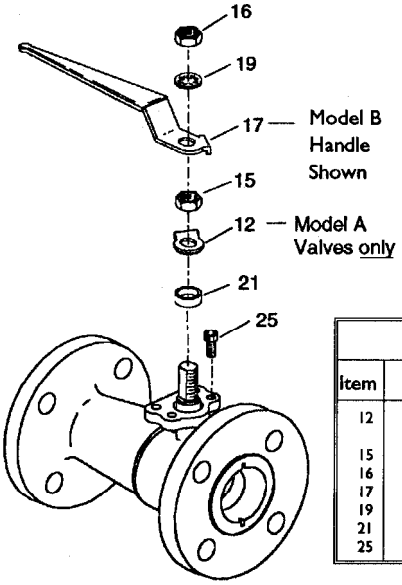
	ON-OFF Service			Flow Control Service		
	FAMILY A/B ACTUATORS	FAMILY C ACTUATORS	FAMILY D ACTUATORS	FAMILY A/B ACTUATORS	FAMILY C ACTUATORS	FAMILY D ACTUATORS
	SERIES B QP QP1, QP2 SL10 ST20/50 ST13/20MS EL8/20 EJ(X)20/50 EH(X)20/50 SP25/50 SP8SR40 SP6/13SR60 SP9/18SR80 V60 V15SR MA010 PMV TORQ-HDLE	SERIES C QP QP3 EJ(X)90 EH(X)90 SP100/200 SP18/36SR40 SP26/52SR60 SP36/72SR80 V150 V45SR	SERIES D,E,F, QP, QP4, QP5 ST200/400 ST60/115MS ST90/175MS ERC160/250 V400 MA030	SERIES B QP QP1, QP2 ST20/50 ST13/20MS SP25/50 SP8SR40 SP6/13SR60 SP9/18SR80 EH(X)20/50	SERIES C QP QP3 SP100/200 SP18/36SR40 SP26/52SR60 SP36/72SR80 EH(X)90	SERIES D, E, F, QP, QP4, QP5 ST200/400 ST60/115MS ST90/175MS ERC160/250
5000 SERIES						
1/2", 3/4" 1" 1 1/2", 2"	LK-829 LK-831 LK-833	— LK-837 LK-835	— LK-840 LK-838	LK-830 LK-832 LK-834	— LK-837 LK-836	— LK-840 LK-839
6000 SERIES						
3/4", 1" 1 1/2"	LK-831 LK-833	LK-837 LK-835	LK-840 LK-838	— —	— —	— —
6600 SERIES						
1/2" 3/4", 1" 1 1/2"	LK-559 LK-675 LK-678	— LK-753 LK-680	— LK-676 LK-682	— — —	— — —	— — —
5600 SERIES						
2"	LK-678	LK-680	LK-682	LK-679	LK-681	LK-683

VALVE PREPARATION:

SERIES 5000, 600O - MODELS A, B
SERIES 5600, 6600 - MODELS A, B, C

1. With the valve removed from the pipeline, turn the valve to the closed position.

2. Remove the handle nut (16). lockwasher (19), handle (17), stem nut (15). indicator stop (12) (Model A valves only), compression ring (2 I). and two stop screws (25). Some heat may be required to break the adhesive bond. These parts are no longer needed. See Figure I.



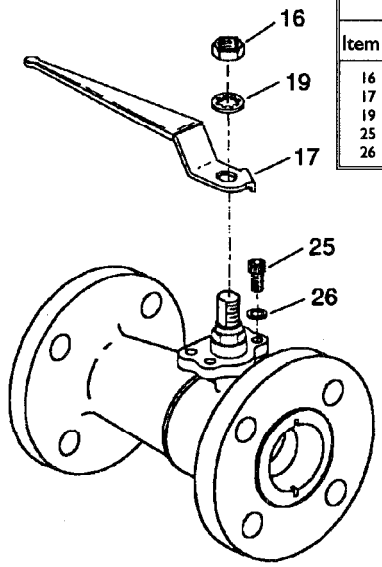
Parts List		
Item	Description	Qty.
12	Indicator Stop (Model A ONLY)	1
15	Stem Nut	1
16	Handle Nut	1
17	Handle	1
19	Lockwasher	1
21	Compression Ring	1
25	Stop Screw	2

Figure I

SERIES 5000, 600O - MODEL C

1. With the valve removed from the pipeline, turn the valve to the closed position.

2. Remove the handle nut (16), lockwasher (19), handle (17), two stop screws (25), and two stop screw spacers (26). Some heat may be required to break the adhesive bond. These parts are no longer needed. See Figure 2.



Parts List		
Item	Description	Qty.
16	Handle Nut	1
17	Handle	1
19	Lockwasher	1
25	Stop Screw	2
26	Stop Screw Spacer	2

Figure 2

LINKAGE ASSEMBLY

NOTE: See Figure 4 for Assembly diagram. Some items supplied with the linkage kit may not be used. Refer to the proper sections below for the specific actuator and valve assembly instructions. Refer to Table III for fastener torque requirements.

1. COMPRESSION RING, STEM NUT, AND BASEPLATE INSTALLATION TO VALVE

SERIES 5000, 600O - MODEL C

Install the baseplate (AI) on the valve and secure it with the three hex, button, or socket head cap screws (A7) and lockwashers (A8) provided.

SERIES 5000, 600O - MODELS A, B

Install the anti-rotation compression ring (A4), or the straight compression ring (A14) and the stem washer (AI 3) supplied with the linkage kit.

Assemble the stem nut (A6) to the stem and tighten down the nut until the stem comes snugly into place. Rotate the stem gently to assure proper seating. Tighten the nut until the stem seals are fully seated, then tighten the nut an additional 1/4 turn.

Install the baseplate (A1) on the valve and secure it with the three hex, button, or socket head cap screws (A7) and lockwashers (A8) provided.

SERIES 5600, 660O - MODELS A, B. C

Install the straight compression ring (AI 4) supplied with the linkage kit.

Assemble the stem nut (A6) to the stem and tighten down the nut until the stem comes snugly into place. Rotate the stem gently to assure proper seating. Tighten the nut until the stem seals are fully seated, then tighten the nut an additional 1/4 turn.

2. BRACKET ATTACHMENT TO ACTUATOR

ALL ACTUATORS EXCEPT MA-030

Mount the bracket (A2) to the actuator with the four hex head cap screws (A9) and lockwashers (A10) provided with the linkage kit. In some cases these screws and lockwashers are identical to (A7) and (A8).

MA-030 ACTUATORS

Mount the bracket (A2) to the actuator using the four spacers and the longer hex head cap screws furnished with the actuator and the lockwashers (A10) provided with the linkage kit. Be sure to mount the spacers between the bracket and actuator.

3. ACTUATOR VERSUS VALVE POSITION

IMPORTANT: Actuator and valve position must agree before further assembly.

Since the valve has already been set in the closed position (Step 1 under Valve Preparation), make sure that the actuator being mounted on the valve is also in the closed position. NOTE: If mounting a spring-return actuator for spring-to-open operation, start at this point with the valve and actuator in the open position. CAUTION: With ST-MS actuators mounted for spring-to-open operation, be sure to correct the position indication by grinding off the cast in letters and restamping the correct open/shut indication. With the Torq-Handle® mounted for spring-to-open operation. follow the instructions in IMO-71 for flipping the handle for proper indication.

4. COUPLING ASSEMBLY AND ACTUATOR ATTACHMENT TO VALVE

ONE PIECE SLIP-ON COUPLING

If provided in the linkage kit, place the spacer (A15) onto the stem and allow it to rest on the stem nut (A6). Place the coupling (A3) onto the stem. If using an actuator with a 3/8" square driver, insert the coupling reducer (A5) into the square hole of the coupling (A3). Place the actuator and bracket subassembly onto the valve and baseplate subassembly, aligning the actuator driver with the square hole in the coupling and the mounting holes in the bracket with the mounting holes in the baseplate.

Install the four hex head cap screws (Al I) and hex lock nuts (Al 2) into the bracket and baseplate. In some cases these screws are identical to (A9). Snug these up, but do not tighten.

TWO PIECE CLAMPED COUPLING

Loosely assemble the two piece coupling with the hardware provided. Place the assembled coupling (A3) onto the stem with a loose fit. If using an actuator with a 3/8" square driver, insert the two pieces of the coupling reducer (A5) into the square hole of the coupling (A3). Place the actuator and bracket subassembly onto the valve and baseplate subassembly aligning the actuator driver with the square hole in the coupling and the mounting holes in the bracket with the mounting holes in the baseplate.

Install the four hex head cap screws (A11) and hex lock nuts (A12) into the bracket and baseplate. In some cases these screws are identical to (A9). Snug these up, but do not tighten.

Tighten the coupling bolts alternately by approximately 1/8 turn each until the torque listed in Table IV is met. Sequence for four-bolt couplings is top right, bottom left, top left, bottom right. The application of Loctite, Screwlock, or equivalent adhesive to the coupling bolts is recommended.

5. ACTUATOR TO VALVE ALIGNMENT

Cycle the actuator a couple of times allowing the assembly to position itself for good stem-to-driver alignment. Tighten the hex head cap screws (A11) and hex lock nuts (A12) securing the bracket to the baseplate.

6. OPEN/CLOSE POSITION ADJUSTMENT

Refer to the appropriate actuator Installation, Maintenance and Operating Instructions (IMO) for instructions on setting the actuator travel stops (See Table V).

For proper ball position in the full open and full closed valve position, use the following procedures:

Valve Open Position: Allowable misalignment of the ball port in relation to the body port is 1/32" misalignment.

NOTE: The seat I.D. should not be used to measure misalignment since in many cases the seat I.D. is larger than the ball and body ports.

Valve Closed Position: With the valve in the closed position against the stops, make a pencil mark on the ball as in Figure 3. Open the valve partly and measure dimension "B". The measurement should deviate no more than ± 1/32" of dimension "B" given in Table II.

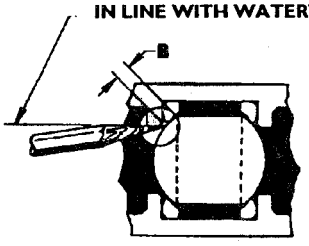


Figure 3

Table II

Dimension "B" For Setting Closed Position

Valve Size	Dimension "B"
Series 5000 Valves	
1/2	3/32
3/4	1/8
1	3/16
1 1/2	1/4
2	9/32
Series 5600 Valves	
Valve Size	Dimension "B"
2"	9/32
Series 6000 Valves	
Valve Size	Dimension "B"
3/4	3/16
1	1/4
1 1/2	9/32
Series 6600 Valves	
Valve Size	Dimension "B"
1/2	3/32
3/4	3/16
1	1/4
1 1/2	9/32

MAINTENANCE

Maintenance of the linkage is not normally necessary.

Before adjusting the valve's stem nut on valves equipped with no-play couplings, be sure to loosen the no-play coupling screws. This will allow stem motion and proper stem seal adjustment. Retighten the coupling screws per instructions, Table IV, p.4.

Table III

(Do Not use for Coupling Screws)

Bracket Bolting Torque for Grade 5 Bolts

Bolt Size	Max. Allowed Torque	
	LB. - FT.	LB. - IN.
#2	—	1.25
#3	—	2
#4	—	3
#5	—	4
#6	—	5.5
#8	—	9
#10	1.25	15
1/4	2.75	33
5/16	5.5	66
3/8	10	120
7/16	15	180
1/2	22	264
9/16	33	396
5/8	45	540
3/4	80	960
7/8	125	1500
1	180	2160
1-1/8	260	3120
1-1/4	350	4200
1-3/8	450	5400
1-1/2	600	7200
M2	—	1
M3	—	3.5
M4	—	8
M5	1.25	15
M6	1.5	18
M8	5.5	66
M10	11	132
M12	19	228
M16	45	540
M20	85	1020
M24	150	1800
M30	285	3420
M36	475	5700
M42	750	9000

DO NOT PRELOAD BRACKET BOLTS TO ALUMINUM OR PLASTIC BODY ACTUATORS.

Table IV				
Two-piece Clamped Coupling Fastener Torques (LB. - FT.)				
Size	1/4"	5/16"	3/8"	1/2"
Torque	8 - 10	20 - 25	30 - 35	40 - 45

Table V	
Installation, Maintenance And Operating Instructions	
Actuator	IMO
SP SERIES	512
SL-10	21
ST-20/ST-50	22
ST-200, ST-400	26
ST-13MS, ST-20MS	25
ST-60MS, ST-90MS, ST-115MS, ST-175MS	23
QP1, 2, 3, 4, 5 QUADRA-POWR®II	31
SERIES B, C, D, E AND F QUADRA-POWR®	32
EL-8	44
EL-20	43
PMV®	37
EJ-20/EJX20	41
EJ50, EJX50, EJ90, EJX90	48
MA-010, MA-030	63
TORQ-HANDLE®	71
V60, V150, V400, V15SR, V45SR	510
ERC160, ERC250	47
EH /EHX SERIES	661

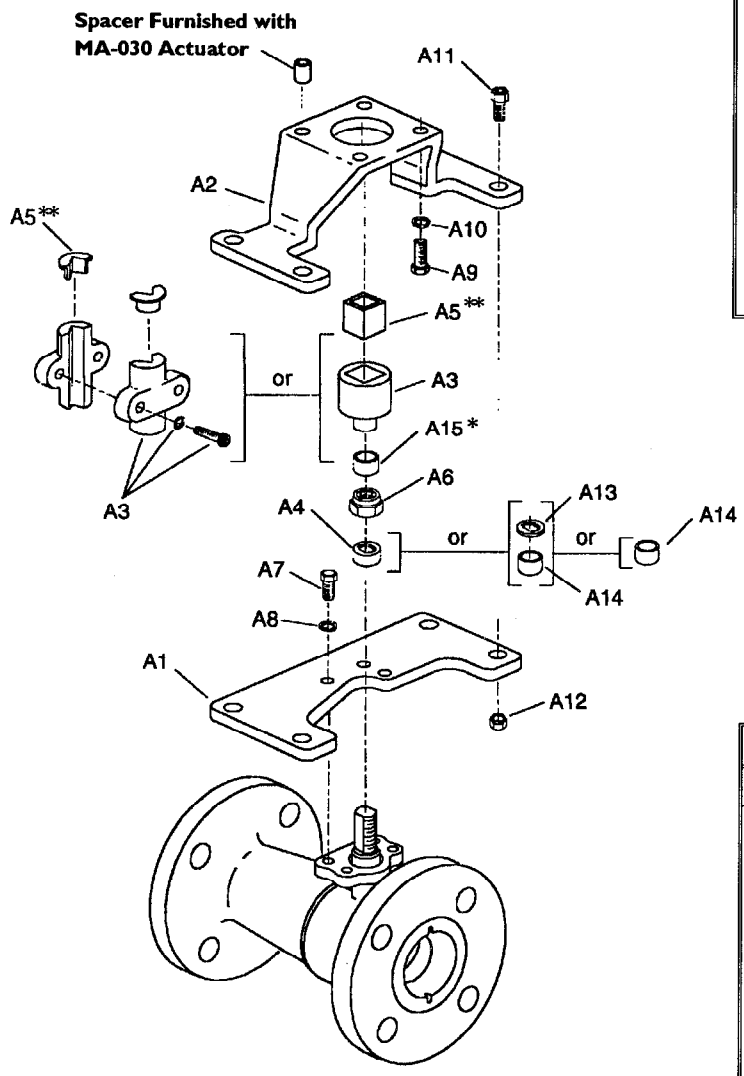


Figure 4

Parts List		
Item No.	Description	Qty.
A1	Baseplate	1
A2	Bracket	1
A3	Coupling	1
A4	Anti-rotation Compression Ring	1
A5	Coupling Reducer**	1
A6	Stem Nut	1
A7	Socket, Hex Or Button Head Cap Screw	3
A8	Lockwasher	3
A9	Hex Head Cap Screw	4
A10	Lockwasher	4
A11	Hex Head Cap Screw	4
A12	Lock Nut	4
A13	Stem Washer	1
A14	Straight Compression Ring	1
A15	Spacer*	1

* May not be included in some on-off kits.
** Used only with 3/8" square drive actuators.

JAMESBURY
NELES CONTROLS GROUP
SEA-PORT CONTROLS, INC
12119 N.E. 99th Street Suite 2000 Vancouver, Wa 98682
Tel:360-253-6333 • Fax: 360-253-9120 • Internet: www.seaportconrols.com
Neles Controls Group • A member of Rauma Corporation